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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/840,230

05/07/2004

Jang-keun Oh

116511-00131

9692

27557

7590

02/21/2007

BLANK ROME LLP

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EXAMINER

HOPKINS, ROBERT A

ART UNIT

PAPER NUMBER

1724

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/21/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/840,230

Applicant(s)

OH ET AL.

Examiner

Robert A. Hopkins

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 5-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-10, 13 and 14 is/are allowed.
- 6) ☒ Claim(s) 11 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 2-2-07.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11 and 12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Japanese reference(52-14775).

Japanese reference teaches a cyclone separating apparatus for use in a vacuum cleaner comprising, a first cyclone (5) for separating dust from dust laden air, a plurality of second cyclones(21) for separating minute particles of dust from dust laden air by a second separation of dust from dust laden air with a centrifugal force, and an inlet-outlet cover(14) disposed on an upper part of the first cyclone and the second cyclones, for a fluid communication between the first cyclone and the second cyclones, the inlet outlet cover through which purified air cleaned by the second cyclone is discharged, wherein the inlet outlet cover comprises an air channel connected such that the whole of air discharged from the first cyclone flows into at least one of the plurality of second cyclones, the inlet outlet cover comprises a plurality of outlet channels(20) penetrating into the inlet outlet cover so air can be discharged from at least one of the plurality of second cyclones, the first cyclone includes at least a first outlet, at least one of the plurality of second cyclones includes at least a second outlet, at least a portion of the plurality of outlet channels is inserted into the second outlet so

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that cleaned air is discharged through the plurality of outlet channels, one end of the outlet channel is connected to the second outlet formed on one side of the at least one second cyclone, and the other end is open in an upward direction of the inlet outlet cover, and the second cyclones are installed on an outer periphery of the first cyclone to enclose the first cyclone(figures 1-3), and the first cyclone and the second cyclones are integrally formed. Japanese reference further teaches wherein a separating partition is installed between the second cyclones.

***Allowable Subject Matter***

Claims 5-10,13, and 14 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 5 recites "the other end of the outlet channel is cut into a slope inclining toward a central direction of the inlet-outlet cover". Japanese reference teaches an outlet channel, but fails to teach an end of the outlet channel which is cut into a slope inclining toward a central direction of the inlet-outlet cover. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide an end of the outlet channel which is cut into a slope inclining toward a central direction of the inlet-outlet cover because Japanese reference does not suggest such a modification. Claims 6-10 depend on claim 5 and hence are also allowed.

Claim 13 recites "a vacuum cleaner comprising: a vacuum cleaner main body for generating a suction force to draw in dust ladened air, a bottom brush for drawing in dust from a bottom, which is a surface to be cleaned, using the suction force, wherein

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the bottom brush is in fluid-communication with the vacuum cleaner main body; ... an inlet-outlet cover installed on an upper part of the first cyclone and the plurality of second cyclones, for fluid communication between the first cyclone and the plurality of second cyclones through which dust-removed air from the plurality of second cyclones is discharged". Japanese reference teaches a cleaner having an inlet outlet cover as claimed, however the cleaner is a stand alone cleaner, and is not capable of being converted into a vacuum cleaner having a main body and a bottom brush.

Furthermore, it would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a cyclone separating apparatus of Japanese reference installed into a vacuum cleaner main body because Japanese reference does not suggest such a modification. Claim 14 depends on claim 13 and hence is also allowed.

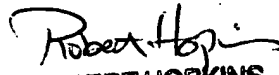
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Thursday, 7:30am-5pm, every Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Rah  
February 9, 2007

  
ROBERT HOPKINS  
PRIMARY EXAMINER  
A.U. 1724